



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/671,548

09/29/2003

Akira Murakawa

018775-877

7496

21839 7590 02/11/2009  
BUCHANAN, INGERSOLL & ROONEY PC  
POST OFFICE BOX 1404  
ALEXANDRIA, VA 22313-1404

EXAMINER

GEE, JASON KAI YIN

ART UNIT

PAPER NUMBER

2434

NOTIFICATION DATE

DELIVERY MODE

02/11/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

<i>Office Action Summary</i>	Application No.	Applicant(s)	
	10/671,548	MURAKAWA, AKIRA	
	Examiner	Art Unit	
	JASON K. GEE	2434	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2008.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12, 17-20, 22-24 and 28-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 17-20, 22-24, and 28-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

*DETAILED ACTION*

1. This action is response to communication: amendment received 12/29/2008, with acknowledgement of benefit date of 06/12/2003.
2. Claims 1-12, 17-20, and 22-24, and 28-33 are currently pending in this application. Claims 28-33 are new.
3. No new IDS has been received.

*Response to Arguments*

4. Applicant's arguments have been fully considered but they are not persuasive.

The applicants have argued that the Smetters reference does not teach the limitations of the independent claims. However, Smetters does teach such limitations. The applicants are arguing that the same private key is not being used to sign the root certificate and the second certificate. As well known in the art, and as shown in Benussi, in paragraph 214, digital certificates are signed with private keys. The digital signing of a certificate with a private key allows anyone with the public key of the certificate authority to confirm that the certificate is genuine. As seen in paragraph 25 of Smetters, the laptop (12(1)) generates a root key pair or uses an existing root key pair, and generates a root certificate, which is digitally signed by the root private key. In paragraph 31, the laptop 12(1) creates a second laptop certificate, which, is the same as the root certificate. Again, in order to create a certificate, it must be signed with a private key. The laptop 12(1) uses the same key to generate a second certificate. The applicants are arguing that Smetters does not teach sending a private key, but this is

Art Unit: 2434

unnecessary as the laptop 12(1) is the one creating both the certificates. Further, sending private keys are contrary to the principles of cryptography. Also, as indicated in paragraph 25 of Smetters, the laptop 12(1) can generate root certificates using preexisting root key pairs. As indicated in paragraph 31, the second certificate is the same as the root certificate, except as described herein. The exceptions are taught in paragraph 32 and 33, wherein the laptop 12(2) specifically indicates that it wishes to use a particular key. The applicants point how this differs than the recited art. However, paragraphs 25 and 31 teaches all the limitations, and the exceptions do not have to be reached in paragraphs 32 and 33 because the second laptop has not requested to use a particular key.

#### *Claim Rejections - 35 USC § 112*

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 31-33 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As per claims 31-33, the claims recite a computer-readable medium. However, a medium was not described in the original specification. Further, it is unclear from the

Art Unit: 2434

specification what medium may comprise of. Computer readable mediums, such as signals and waves, are directed toward non-statutory subject matter.

As per claim 33, the claim recites wherein the information is a printer driver. However, the specification does not teach sending a printer driver to a client before a request for communication is requested by the client.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 32 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 32, the claim recites wherein the computing device is a device which functions as a printer. It is unclear what functions of a printer the computing device may have. It is unclear whether the applicants are trying to limit the device to be a non-printing device with the functions as a printer.

### *Claim Rejections - 35 USC § 103*

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 4, 5, 7, 10, 12, 17, 20, 22-24, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smetters et al. US Patent Application Publication 2004/0088548 (hereinafter Smetters), and in view of Benussi et al. SU Patent Application Publication 2001/0044898 (hereinafter Benussi).

As per claim 1, Smetters teaches a communication system in which a device and a client communicate data with each other through a network, wherein said device comprises: a first storage device which stores a root certificate including a public key paired with a private key and being signed with a private key (paragraph 25); a certificate creator which creates, when a connection for communication is requested by said client, a second certificate designating the root certificate as a certificate authority at a higher level and being signed with the private key (paragraph 28 and 31); and a communication device which transmits the second certificate created by said certificate creator to said client (paragraph 35); and wherein said client comprises a second storage device which stores the root certificate stored in said first storage device (paragraph 35); and a verifier which verifies the signature of the second certificate received from said device with the root certificate stored in said second storage device (paragraph 42).

However, at the time of the invention, Smetters does not teach all the limitations of the claims. Smetters does not explicitly teach a second storage device which already stored the root certificate before the connection for communication is requested. Smetters in paragraph 35 teaches that the root and the secondary are sent together at

Art Unit: 2434

the same time. However, it would have been obvious to have stored the root certificate earlier. This is taught in paragraph 214 of Benussi. This paragraph also teaches that certificates are signed with private keys to confirm whether a certificate is genuine or not.

At the time of the invention, it would have been obvious to combine the Smetters and the Benussi reference. One of ordinary skill in the art would have been motivated to perform such an addition to create more security and also providing a system for configuring a connectivity unit that is user friendly and yet involving the provisions of user-specific communication parameters (Benussi paragraph 5).

As per claim 4, Smetters teaches the communication system where the client is a personal computer (paragraph 30).

As per claim 5, Smetters teaches wherein the second storage device is a hard disk drive (paragraph 19).

As per claim 7, Smetters teaches a communication method for a communication system in which a device and a client communicate data with each other through a network, wherein the device holds a root certificate including a public key paired with a private key and being signed with the private key (paragraph 25); the client installs the root certificate which is held in the device and which includes the public key (paragraph 35), the device creates, when a connection for communication is requested by the client (paragraph 28), a second certificate designating the root certificate as a certificate authority at a higher level and being signed with the private key when data is sent to the client (paragraph 31); the device sends the second certificate to the client (paragraph

Art Unit: 2434

35); and the client verifies the signature of the second certificate received from the device with the installed root certificate (paragraph 42). Similar to claim 1, Benussi further shows that it would be obvious to have stored the root certificate earlier before the second certificate is created. . This is taught in paragraph 214 of Benussi. This paragraph also teaches that certificates in general are signed with private keys to confirm whether a certificate is genuine or not.

As per claim 10, Smetters teaches wherein when the client installs the root certificate, the installation is performed after the root certificate is conformed by a user (paragraph 31).

As per claim 12, Smetters teaches wherein the data is communicated according to the security sockets later (SSL) protocol (paragraph 29).

Claim 17 is rejected using the same basis of arguments used to reject claim 1 above.

As per claim 20, Smetters teaches wherein the root certificate stored in said first storage device is stored in said second storage device prior to the transmission of the second certificate from said communication device (paragraph 27; also Benussi paragraph 214).

As per claim 22, Smetters teaches wherein said verifier is operable to verify the signature of the second certificate by decrypting the public key of the root certificate stored in said second storage device to obtain a first hash value, calculating a second hash value of the second certificate received from said device, and comprising the first



Art Unit: 2434

and second hash values to determine if they are equal to each other (paragraph 41 and 42).

As per claim 23, Smetters teaches wherein the device sends the second certificate to the client after the root certificate is installed in the client (paragraph 35 and Benussi paragraph 214).

As per claim 24, Smetters discloses wherein the client installs the at least one intermediate certificate prior to receiving the second certificate from the device (paragraph 35).

As per claim 30, it is inherent that a root certificate is created by a root certificate creator.

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smetters and Benussi as applied above, and further in view of Frailong et al. US Patent No. 6,012,100 (hereinafter Frailong).

As per claim 8, Smetters teaches holding at least one intermediate certificate for one or more certificate authorities existing in a hierarchical order up to a root certificate authority (Figure 7); the client installs the at least one intermediate certificate in addition to the root certificate (paragraph 35); the device sends the second certificate to the client (paragraph 31); the client verifies the signature of the second certificate received from the device with the at least one intermediate certificate installed therein, and

verifies the signature of the at least one intermediate certificate received from the device with the root certificate installed therein (paragraph 42).

For further clarification on hierarchical certificates and a device holding the certificates, see Frailong Figure 14 and col. 18 line 55 to col. 19 line 60, wherein a device holds the root certificate along with the intermediate and secondary certificates.

At the time of the invention, it would have been obvious to include the Frailong reference with the Smetters combination. One of ordinary skill in the art would have been motivated to perform such an addition to provide a system for connecting a computer or client network to the internet with minimal user interaction and also automatically upgrading and reconfiguring a network interface connection between a computer or client network and an internet (col. 2 lines 15-22 of Frailong).

11. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smetters and Benussi as applied above, and further in view of Debry US Patent No. 6,918,042 (hereinafter Debry).

As per claim 2, the Smetters combination does not teach all the limitations of this claim. However, these deficiencies are taught by Debry. Debry teaches wherein a said device is a printer (col. 5 lines 59-60).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to include the teachings of Debry with the Smetters combination. One of ordinary skill in the art would have been motivated to perform such an addition to provide print servers to which computer systems can be communicatively linked (col. 1

Art Unit: 2434

lines 5—53) and to protect printers themselves from malicious attacks (col. 5 lines 33-34)..

As per claim 3, Debry teaches wherein the device is a multifunctional peripheral (col. 6 lines 9-14).

12. Claims 9, 11, 18, 19, 26, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smetters and Benussi as applied above, and further in view of Debry US Patent No. 6,918,042 (hereinafter Debry) and Slick US Patent Application Publication 2004/0109568 (hereinafter Slick).

With regard to claim 9, Smetters discloses a method comprising: when the client installs the root certificate, the client requests the root certificate from the device ([0031] lines 5-7), receives the root certificate from the device ([0035]: lines 2-'3), converts the received root certificate to a predetermined format when the root certificate is received ([0026]: lines 7-10, since different types of certificates can be used; it is well known in the art for any of these certificates to be converted to one standard in order to communicate with each other), and installs the converted root certificate ([0035]: line 3, storing the certificates in memory reads on client installs the converted root certificate received from the client).

Neither Smetters nor Benussi discloses the device where the device is a printer. Debry, on the other hand, discloses the device is a printer (col. 5: lines 59-60). It would have been obvious to one of the ordinary skill in the art at the time of the applicant's invention was made to modify the methods of Smetters and Benussi such

Art Unit: 2434

that to include the device is a printer, as taught by Debry, and would be motivated to provide print servers to which the computer system can be communicatively linked (col. 1: lines 51-53) and to protect printers themselves from malicious attacks (col. 5: lines 33-34).

However, Smetters, Benussi nor Debry discloses a printer driver from the device is installed in the client device. Slick discloses a printer driver from the device is installed in the client ([0057]: lines 1-4).

At the time of the invention it would have been obvious to one of the ordinary skill in the art at the time of the applicant's invention was made to modify the methods of Smetters, Benussi and Debry to include the installation of a printer driver from the device, as taught by Slick, and would be motivated to provide the private key through a printer driver ([0005]: lines 8-11).

As per claim 11, and similar claims 18-19 and 26 - 27, Smetters discloses method/device where the client installs the root certificate after the printer driver from the device is installed in the client ([0035]: line 3, storing the certificates in memory reads on client installs the root certificate received from the client. Furthermore, it is well known in the art for a device to install a driver of that device prior to communicate with it as presented below) but neither Smetters nor Benussi discloses the device is a printer, and install the root certificate after a printer driver is installed from the device.

Debry, on the other hand, discloses the device is a printer (col. 5: lines 59-60). It would have been obvious to one of the ordinary skill in the art at the time of the

Art Unit: 2434

applicant's invention was made to modify the methods of Smetters and Benussi such that to include the device that has print function, as taught by Debry, and would be motivated to provide print servers to which the computer system can be communicatively linked (col. 1: lines 51-53) and to protect printers themselves from malicious attacks (col. 5: lines 33-34).

However, Smetters, Benussi nor Debry discloses a printer driver is installed from the device. Slick discloses a printer driver is installed from the device ([0057]: lines 1-4, further notes that in order communication with the printer; the printer driver needs to be active before any communication).

It would have been obvious to one of the ordinary skill in the art at the time of the applicant's invention was made to modify the methods of Smetters and Debry such that to include the installation of a printer driver from the device, as taught by Slick and would be motivated to provide the public key through a printer driver ([0005]: lines 8-11).

13. Claim 6 is rejected under 35 USC 103(a) as unpatentable over Smetters and Benussi as applied above, and further in view of Vogel et al. (US Pat. No. 6816900), hereafter "Vogel".

With regard to claim 6, Smetters discloses the communication system (Abstract) but neither Smetters, nor Benussi discloses the second storage device is a read-only memory. Vogel discloses the second storage device is a read-only memory (Fig. 2: item 150).

At the time of the invention, it would have been obvious to one of the ordinary skill in the art at the time of the applicant's invention to modify the methods of Smetters and Benussi such that to include a read-only memory for the second storage device in the communication system, as taught by Vogel, and would be motivated to provide a more user-friendly way in which root certificates at the client computer can be managed (col. 2: lines 8-10).

14. Claim \$\$\$ rejected under 35 USC 103(a) as unpatentable over Smetters and Benussi as applied above, and further in Schneier's Applied Cryptography, 2nd Edition (hereinafter Schneier)

As per claims 28, Smethers does not explicitly teach wherein the second storage device of said client has stored therein, before the connection for communication is requested to said device, the public key of the root certificate stored in said first storage device; and the verifier verifies the signature of the second certificate received from said device by decrypting the second certificate with the public key of the root certificate stored in said second storage device. However, this would have been obvious. In public key cryptography, public keys are agreed on obtained prior to sending encrypted works. This is shown in Schenier, in paragraphs 31 and 32. As also seen on page 37, wherein the public key is already assumed to be in possession before a certificate is needed to be verified. As shown throughout Benussi and Smetters, the public key is used to decrypt and verify the certificate.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the Schenier reference. One of ordinary skill in the art would have been motivated to include such an addition to create more security. As seen in pages 31 and 32, utilizing such public key algorithms are useful and efficient as they solve the key-management problems with symmetric cryptosystems.

Claim 29 is rejected using the same basis of arguments used to reject claim 27.

Claim 31 is rejected using the same basis of arguments used to reject claims 1 and 28 above.

15. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smetters, Benussi, and Schneier as applied above, and further in view of Debry US Patent No. 6,918,042 (hereinafter Debry).

As per claim 32, the Smetters combination does not teach all the limitations of this claim. However, these deficiencies are taught by Debry. Debry teaches wherein a said device is a printer (col. 5 lines 59-60).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to include the teachings of Debry with the Smetters combination. One of ordinary skill in the art would have been motivated to perform such an addition to provide print servers to which computer systems can be communicatively linked (col. 1 lines 5—53) and to protect printers themselves from malicious attacks (col. 5 lines 33-34)..

Art Unit: 2434

16. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smetters, Benussi, and Schneier as applied above, and further in view of Slick US Patent Application Publication 2004/0109568 (hereinafter Slick).

As per claim 33, the Smetters combination does not explicitly teach all the limitations of the claims. However, these deficiencies are taught by Slick. Slick teaches discloses a printer driver from the device is installed in the client device. Slick discloses a printer driver from the device is installed in the client ([0057]: lines 1-4).

At the time of the invention it would have been obvious to one of the ordinary skill in the art at the time of the applicant's invention was made to modify the methods of Smetters, Benussi and Debry to include the installation of a printer driver from the device, as taught by Slick, and would be motivated to provide the private key through a printer driver ([0005]: lines 8-11).

### *Conclusion*

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the



Art Unit: 2434

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON K. GEE whose telephone number is (571)272-6431. The examiner can normally be reached on M-F, 7:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kambiz Zand can be reached on (571) 272-38113811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason Gee  
Patent Examiner  
Technology Center 2400  
02/04/2008  
/Kambiz Zand/

Supervisory Patent Examiner, Art Unit 2434